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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,255	12/01/2003	Chiou-Shann Fuh	IACP0043USA	1254

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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION  
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EXAMINER

CHU, RANDOLPH I

ART UNIT PAPER NUMBER

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/23/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/23/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary**

Application No.

10/707,255

Applicant(s)

FUH ET AL.

Examiner

Randolph Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 5, 6, 7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Fattal et al. ("Gradient Domain High dynamic Range Compression", Provisional application of US 2005/0254722 filed on Jan. 15, 2002).

With respect to claim 5, Fattal et al. teaches, an image generator for generating a high dynamic range image, the high dynamic range image having a plurality of pixels, the pixels respectively corresponding to a plurality of first luminance values (1. Introduction); and an image processing logic for converting the first luminance values associated with the pixels into a plurality of second luminance values and utilizing a film transfer function for mapping the second luminance values associated with the pixels into a plurality of third luminance values without adding visual artifacts to generate a low dynamic range image; wherein a second luminance range of the second luminance

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values is smaller than a first luminance range of the first luminance values (Abstract, 3 Gradient domain HDR compression).

With respect to claim 6, Fattal et al. teaches a digital camera (1 Introduction).

With respect to claim 7, Fattal et al. teaches that the image generator is capable of capturing a plurality of images with different exposures for generating the high dynamic range image (1 Introduction).

With respect to claim 10, Fattal et al. teaches the image processing logic is capable of performing a global gradient compression to convert the first luminance values into the second luminance values (3 Gradient domain HDR compression).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 4 are rejected under 35 USC 103(a) as being unpatentable over Fattal et al. ("Gradient Domain High dynamic Range Compression", Provisional

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application of US 2005/0254722 filed on Jan. 15, 2002) in view of Smith (US 5,832,133).

Fattal et al. teaches converting the first luminance values associated with the pixels into a plurality of second luminance values, a second luminance range of the second luminance values being smaller than a first luminance range of the first luminance values (Abstract, 3. Gradient domain HDR compression); and

Fattal et al. does not teaches expressly that utilizing a film transfer function for mapping the second luminance values associated with the pixels into a plurality of third luminance values to generate the low dynamic range image, wherein the film transfer function adds no visual artifact to the low dynamic range image.

Smith teaches utilizing a film transfer function for mapping the second luminance values associated with the pixels into a plurality of third luminance values to generate the low dynamic range image (Fig. 4, Fig. 5, col. 5 lines 54-col. 6 and col. 7 lines 21-53).

Smith does not explicitly disclose that film transfer function does not add artifact. But it is obvious to person in the ordinary skilled in the art that artifact is not desirable to transfer function.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use film transfer function image to generate output image in the method of Fattal et al.

The suggestion/motivation for doing so would have been that characteristic and attributes of image are adjusted by transfer function so that it is suitable for display in display device.

Therefore, it would have been obvious to combine Smith with Fattal et al. to obtain the invention as specified in claim 1.

With respect to claim 4, Fattal et al. teaches (a) is performed by a global gradient compression (3. Gradient domain HDR compression).

Claims 2, 3, 8 and 9 are rejected under 35 USC 103(a) as being unpatentable over Fattal et al. ("Gradient Domain High dynamic Range Compression", Provisional application of US 2005/0254722 filed on Jan. 15, 2002) in view of Smith (US 5,832,133) and in further view of Fujimura et al. (US 5,808,697).

Fattal et al. in view of Smith teaches all the limitations of claims 1 and 5 as applied above from which claims 2, 3, 8, 9 respectively depend.

With respect to claims 2 and 8, Fattal et al. in view of Smith does not teach expressly that performing a histogram equalization to adjust the second luminance values distributed among the pixels.

With respect to claims 3 and 9, Fattal et al. in view of Smith does not teach expressly that preventing a total number of predetermined pixels corresponding to a second luminance value from being greater than a predetermined limit.

With respect to claims 2 and 8, Fujimura et al. teaches performing a histogram equalization to adjust the second luminance values distributed among the pixels (Fig. 22.; col. 16 lines 43 –52).

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With respect to claims 3 and 9, Fujimura et al. teaches preventing a total number of predetermined pixels corresponding to a second luminance value from being greater than a predetermined limit (Fig. 22., ref. no. 106; col. 16 lines 66 – col. 17 line 2).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to equalize image using histogram in the method of Fattal et al. in view of Smith.

The suggestion/motivation for doing so would have been that this correction help prevent over enhancement.

Therefore, it would have been obvious to combine Fujimura et al. with Fattal et al. and Smith to obtain the invention as specified in claims 2, 3, 8 and 9.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am.- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/



JOSEPH MANCUSO  
SUPERVISORY PATENT EXAMINER